

#### **ABSTRACT OF THE DISCLOSURE**

**[46]** A magnetic resonance RF coil comprises a conductive material deposited on a dielectric substrate. The conductive material includes magnetic field generating elements used to generate an RF magnetic field and interdigital capacitor elements.

- 5 The capacitor elements are oriented parallel to the magnetic field generating elements and, therefore, to a main static magnetic field within which the coil is to be located. This orientation minimizes arcing resulted from emitted electrons and helps to prevent catastrophic breakdown of the coil.